

REPORT OF THE STATE NATURAL GAS  
SUPERVISOR FOR THE YEAR 1909.

BY

B. A. KINNEY.

## LETTER OF TRANSMITTAL.

OFFICE OF STATE NATURAL GAS SUPERVISOR.

MARION, INDIANA, Feb. 21, 1910.

Hon. W. S. Blatchley, State Geologist of Indiana :

Dear Sir—I have the honor to submit to you herewith the manuscript of my annual report as State Natural Gas Supervisor, the same being for the year 1909, and the eighteenth report issued from this office.

Again acknowledging the cordial support that I have received from you while I have had charge of this office, and thanking you for the same, I remain,

Yours very truly,

B. A. KINNEY,  
*State Natural Gas Supervisor.*

# Annual Report of State Natural Gas Supervisor.

## THE PLUGGING LAW.

The work of this department for the past year was greatly increased and made much more beneficial for the welfare of the State of Indiana by the passage of the new well-plugging law. Up to this time it has been practically impossible for the department to get at the persons who were illegally pulling abandoned wells without properly plugging them. The evils that were attributed to this illegal and improper plugging were: (1) the lowering of fresh water veins twenty feet farther down in limestone since the discovery of gas and oil, due to water being allowed to flow down into Trenton Rock and penetrate oil and gas-bearing sands; (2) the tainting of the drinking water by salt water and oil rising in the above-mentioned wells to the water veins; (3) the drowning out of the gas and the spoiling of good oil wells by the flood of fresh water from above.

As to the second of these evils, I can say that here in Grant County, the drinking water has, during the past year, become entirely free from the unpleasant crude-oil taste that it formerly had. Occasional visitors have noticed this fact and have commented upon it. As to the third of the above-mentioned evil results of bad plugging, there has been, where legal plugging has been most extensive, a slight increase in gas pressure. Though this increase is slight at present, many oil and gas producers are looking for a big improvement in this way. The great decrease of gas in the old Gas Belt was the immediate result of two great evils, namely, pumping and the drowning out of the gas by fresh water.

The law reads as follows:

### *Natural Gas Supervisor—Plugging Wells.*

Section 1. Be it enacted by the General Assembly of the State of Indiana, That before the casing shall be drawn from any well drilled into gas or oil-bearing rock for the purpose of abandoning the same, it shall be the duty of any person, firm or corporation having the custody of such well, or having charge of removing the

casing therefrom for the purpose of abandoning the same, at the time of such abandonment, to properly and securely stop and plug each of said wells so abandoned in the following manner: Such hole shall first be solidly filled from the bottom thereof to a point at least twenty-five (25) feet above such gas or oil-bearing rock with sand, gravel or pulverized rock, on the top of which filling shall be seated a dry pine-wood plug not less than two (2) feet long, and having a diameter of one-fourth of an inch less than the inside diameter of the casing of such well; above such wooden plug such well shall be solidly filled for at least twenty-five (25) feet with the above mentioned filling material; immediately above this shall be seated another wooden plug of the same kind and size as above provided, and such well shall again be solidly filled for at least twenty-five (25) feet above said second plug with such filling material. After the casing has been drawn from such well there shall immediately be seated at the point in said well where such casing was seated a cast-iron ball, the diameter of which ball shall be greater than that of the hole below the point where such casing was seated, and above such ball such well shall again be solidly filled with the above-mentioned filling material for a distance of fifty (50) feet. Any person, firm or corporation owning or having charge or supervision of any well which has been drilled into gas or oil-bearing rock, or having charge or control of removing the drive pipe or casing from any such well, and from which the drive pipe and casing or the drive pipe alone has been or shall be pulled, leaving therein the tubing, casing, or both, shall give notice to the state natural gas supervisor, and under the supervision and direction of said supervisor, or one of his assistants, shall plug such tubing where such tubing only remains in such well, and shall fill from the bottom up not less than three hundred (300) feet with cement and clean sand, one part Portland cement to four parts of sand, and where the casing and tubing remain in any such well, such well shall be filled on the packer with not less than fifty (50) feet of Portland cement and sand, and if there be no such packer, with not less than one hundred (100) feet of Portland cement and sand in the proportion hereinbefore indicated, and in all cases where the drive pipe and casing or either the drive pipe or casing are removed from any such well and the tubing is left therein said tubing shall be plugged as herein provided, and if any part of the tubing, drilling stem or other substance prevent the plugging of any such well or

wells as hereinbefore provided, such well or wells shall be filled to a point within twenty-five (25) feet of the top part of said tubing, drill stem or substance with sand, gravel or crushed stone, and shall thereupon be filled to a point twenty-five (25) feet above such part of tubing, drill stem or substance with Portland cement and sand, all proportioned as above provided.

*Notice to Supervisor—Fee.*

Sec. 2. Any person, firm or corporation, before proceeding to plug any such well so drilled into any gas or oil-bearing rock, or to pull the casing or drive pipe therefrom, shall notify the state natural gas supervisor, or one of his authorized assistants, of such intention, and the time and place where such plugging is to be done, and it shall be the duty of said natural gas supervisor or his duly authorized assistants, to be present in person all the time while such plugging is being done, and the same shall be done under his instructions and supervision, and such person, firm or corporation so plugging such well shall file, or cause to be filed, in the office of the recorder of the county in which any such well is located, within fifteen days after the same has been plugged, as provided in section one (1) hereof, a written statement of such state natural gas supervisor, or his duly appointed assistant, showing that such well was duly plugged under his personal supervision and instruction and in the manner herein prescribed and required, which statement shall be recorded in the miscellaneous records in the office of such recorder. And for supervising and superintending the plugging of any such well said person, firm or corporation plugging such well or having the same done, shall pay in advance of doing any such work or plugging a fee of five dollars (\$5.00) to the state natural gas inspector or his assistants, to be by them turned into the state treasury.

*Assistants—Compensation.*

Sec. 3. For the purpose of enforcing the provisions of this act and supervising the plugging of said wells the state natural gas inspector shall appoint such assistants as he may deem necessary, who shall receive for their services for such supervision in the plugging of each well the sum of five dollars (\$5.00), to be paid by the treasurer of state each month, upon a warrant drawn by the auditor of state, upon a verified statement made by said assistants showing the wells plugged by him during such month, their location, the date when plugged and by whom the fee has been paid, and

file the same with the auditor of state. Such verified statement shall, before any warrant is drawn thereon or therefor, be approved by the state natural gas supervisor, and in no event shall any such assistant be paid any such fee until the same shall have been (paid) into the treasury of state as herein provided.

*Salt Water or Oil.*

Sec. 4. It shall be the duty of every person, firm or corporation who sinks or maintains a well to the depth of the oil or salt-bearing strata to prevent the salt water or oil of any such well from flowing into fresh water strata of that or any other well.

*Fresh Water—Casing Off.*

Sec. 5. It shall be the duty of any person, firm or corporation sinking a well into any gas or oil-bearing rock, or maintaining the same after it has been sunk, to case off and keep cased off all fresh water from such well until such well has been plugged as herein provided.

*Powers of Supervisor.*

Sec. 6. For the purpose of enforcing the provisions of this act the state natural gas supervisor is hereby authorized and empowered to enter upon any land at any time for the purpose of examining or testing any such well or wells for the purpose of plugging the same, and said supervisor and his assistants are hereby given police powers to arrest persons found violating any of the provisions of this act.

*Penalty.*

Sec. 7. Any person, firm or corporation violating any of the provisions of this act shall, on conviction, be fined in any sum not less than one hundred dollars nor more than one thousand dollars, to which may be added imprisonment in the county jail not to exceed six months.

*Repeal.*

Sec. 8. All laws and parts of laws in conflict herewith are hereby repealed.

*Emergency.*

Sec. 9. Whereas an emergency exists for the immediate taking effect of this act, the same shall be in full force from and after its passage.

Heretofore it has been impossible for this department to hire a sufficient number of deputies to enforce proper plugging. How-

ever, the new law remedies this by the clause providing that before a well can be plugged the department must be notified, and by the fee clause by which inspectors are paid. In compliance with the law the department has had thirty-nine deputy inspectors at work plugging 3,029 wells in thirty-one counties of the State of Indiana. These wells were plugged between April 1, 1909, and January 1, 1910. It can easily be seen what a vast amount of damage could have been done if these wells had not been properly plugged. There has not been a single instance reported where pullers have failed to notify the office when there was plugging to be done. It can easily be seen that the law is working splendidly.

The following table will show the distribution of the above mentioned wells as plugged in counties and by months:

COUNTIES.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Adams.....	2	15	2		15	10	1	26	11	82
Allen.....		1								1
Blackford.....	27	33	28	16	72	53	69	39	23	300
Cass.....					1				1	2
Delaware.....	10	12	7	4	43	42	9	19	5	151
Gibson.....		8	2		1			5	2	18
Grant.....	64	143	130	88	61	83	102	65	52	788
Greene.....		1								1
Hamilton.....		3		1	4		5	3	3	19
Hancock.....	1	1		3	4	5	8	3		25
Harrison.....									1	1
Henry.....	1	1	1		5	4				12
Howari.....	13	12	26	5	11	16	10	14	6	113
Huntington.....	39	65	29	36	28	55	46	16		314
Jav.....	5	10	1	8	10	18	10	17	8	87
Knox.....							1			1
Lawrence.....									1	1
Madison.....	4	14	20	14	10	5	8	12	5	92
Marion.....					1					1
Miami.....	1		1			1				3
Pike.....	1	2	3	1	2			6	2	17
Pulaski.....							2			2
Randolph.....	2		2	10	18	7	3	25	2	69
Rush.....	1	2	2			2				9
Spencer.....					1	1		3		5
Sullivan.....	2									2
Tipton.....			4		2			1	1	9
Wabash.....		2				1			1	5
Warrick.....	1									1
Wayne.....		1								1
Wells.....	86	82	95	140	127	68	85	100	54	837
Total.....										3,029

### THE OLD FIELD.

To sum up in a few words the conditions of the old North Field, it can be said that owing to the results of the new plugging law the pressure for the whole field is improving. Drilling is still going on and many producers have hopes that there will be a rejuvenation of this field.

*The Condition of the Central-Eastern Indiana Field.*

There is an idea prevalent among many people of the State of Indiana that the day for the use of natural gas as a fuel is at an end. This idea is most assuredly a mistaken one. One has but to visit Greensburg, Rushville, Knightstown, Connersville, Shelbyville, or other cities and towns of central-eastern Indiana to find this out. In Rushville there are four gas companies doing business, three of which are using gas from a total of eighty-six wells, which have a rock pressure varying from 100 pounds to 360 pounds. The records for these three companies are as follows:

*People's Gas Company.*

Number of wells operated.....	17
Average depth.....	825 ft.
Rock pressure varies from 100 to 300 pounds.	
New wells sunk in the past year.....	5
Wells abandoned.....	3

During the fall this company drilled a well that turned out to be a freak from the fact that at a depth of 550 feet they struck an abundant supply of gas, whereas the gas was never struck before at less than 825 feet. The record of the first test of this well is as follows:

3 seconds .....	75 lbs.
9 seconds .....	160 lbs.
15 seconds .....	125 lbs.
21 seconds .....	150 lbs.
27 seconds .....	175 lbs.
38 seconds .....	200 lbs.
51 seconds .....	225 lbs.
1:32 seconds .....	305 lbs.

After using this well for three months another test was made, giving the following results:

6 seconds .....	25 lbs.
28 seconds .....	50 lbs.
53 seconds .....	75 lbs.
1:10 seconds .....	100 lbs.

*The Rushville Natural Gas Company.*

Number of wells operated.....	32
Average depth.....	850 ft.
Average rock pressure.....	150 lbs.
Number wells drilled in past year.....	8
Number wells abandoned in past year.....	2



*Central Fuel Company.*

Number of wells operated.....	37
Average depth.....	900 ft.
Average rock pressure.....	100 to 300 lbs.
Number wells drilled in past year.....	6
Number wells abandoned in past year.....	0

At Arlington, Rush County, there are two companies operating ten wells with an average rock pressure of seventy-five pounds. Besides this there are in Rush County more than 100 wells owned and operated by farmers for their own use. There are also numerous small incorporated companies scattered over the county. At Carthage a company is operating twenty-two wells with an average pressure of seventy pounds. At Gwynneville, Morristown and Fountaintown there are small companies furnishing the citizens with gas for household use.

In Decatur County the gas has been holding out very well. In Greensburg, where six companies are doing business, gas is being furnished in plentiful supply to the citizens at fifteen cents per 1,000 cubic feet. In addition to the companies operating here, there are companies in Clarksburg, Newpoint, Adams, St. Paul, Sandusky and Westport. There are also in this county 100 or more private wells sunk and owned by farmers for their individual use.

The companies at Greensburg are:

*The Greensburg Natural Gas Co.*

Operating.....	25 wells.
Average depth.....	900 ft.
Average rock pressure.....	75 to 240 lbs.
New wells drilled during past year.....	2

*Greensburg Gas and Electric Light Co.*

Number of wells operated during past year.....	30
Average depth.....	900 ft.
Average rock pressure.....	200 lbs.
New wells drilled during past year.....	5
Number of wells abandoned during past year.....	2

*Muddy Fork Gas Co.*

Number wells operated during past year.....	35
Average depth.....	850 to 875 ft.
Average rock pressure.....	200 lbs.
New wells drilled during past year.....	2

*Dashiel Gas Co.*

Number of wells operated during past year.....	8
Average depth.....	910 ft.
Average rock pressure.....	150 lbs.
New wells drilled during past year.....	1
Number of wells abandoned during past year.....	2

Mr. Chas. R. Porter, of the Greensburg Natural Gas Company, in a letter telling of the condition of this field, says: "The gas is developed in the Niagara shale and is found at a depth of 860 to 900 feet. It is in limited quantity, probably due to the density of the stone. In the drillings of all the work in this county there has never been found, to my knowledge, a piece of porous rock. We undoubtedly get the gas through crevices by shooting with large amounts of nitro-glycerin—usually sixty quart shots."

At Connersville the Connersville Natural Gas Company is furnishing gas at fifty cents per 1,000 cubic feet. The record of this company is:

Number of wells operated.....	30
Average depth.....	900 ft.
Average rock pressure.....	125 lbs.
Number of new wells drilled in past year.....	5
Number of wells abandoned in past year.....	5

In Henry County there are companies operating at Knightstown, Newcastle, Spiceland, Shirley and Kennard. At Knightstown the Knightstown Gas Company is using gas from thirty to thirty-five wells giving a pressure of from 40 to 100 pounds. During the past year they have drilled three successful wells. The Soldiers' and Sailors' Orphans' Home is using gas from five wells. Besides, there are probably twenty-five individual wells within a radius of ten miles of Knightstown. At Newcastle the Citizens' Natural Gas Company is using gas from ten wells, and the Light, Heat and Power Company is still using some natural gas.

At Cambridge City the Cambridge Natural Gas Company is operating with thirty-five to forty wells in Henry, Rush and Fayette counties. The pressure in the eastern part of this field, which is practically new territory, runs from 175 to 280 pounds. The depth at which gas is found here varies from 850 to 930 feet. This company has drilled five good wells and is still drilling.

At Winchester, Randolph County, the Rock Oil Company is furnishing gas to the citizens from fifteen wells having a rock pressure of 150 pounds. During the year they drilled four new wells and pulled none.

It can be seen from these statistics that though the pressure is failing in some localities it is gaining in others, that more wells are being drilled than are abandoned, and that natural gas is still a factor in this old field of central-eastern Indiana.

#### THE NEW FIELD.

The past year in the Southern Field has been one of great activity. This field now covers parts of Pike, Gibson, Spencer and Martin counties. Operations have begun in Warrick County and several bores are being put down.

Big operators are planning to drill a chain of five test wells covering a territory running from Vincennes, Knox County, to the Kentucky line at Rockport, Spencer County. This is an attempt to find the link between the Kentucky and the Illinois fields. Up to the present time but one of these wells has been completed, this one being at Gentryville, Spencer County. This location is twenty-five miles southeast of the Oakland City field. This well produced 1,000,000 cubic feet of gas the first twenty-four hours with a rock pressure of 425 pounds. It is practically a proven fact that this is a continuation of the Pike County field, as the formations passed through were almost identical as in the Pike County wells. The record for the Gentryville well is as follows:

Drilled by The Southern Oil and Gas Company on the Fred Fakes farm, Sec. 3, Range 6 W., Jackson Township, Spencer County:

	<i>Feet.</i>
10-inch drive pipe.....	80
8-inch drive pipe.....	400
Showing of oil.....	720
6½-inch casing .....	900
Gas sand .....	900
Finished .....	1,025
Rock pressure, 425 pounds.	
Capacity of first twenty-four hours, 1,000,000 cubic feet.	

The first gas well drilled in the Oakland City field, in Pike County, was the one on the M. Burnett farm, drilled by the M. Murphy Oil Company in April, 1908. This well had a capacity of 5,000,000 cubic feet. From time to time it has been gauged by the department and gave a minute pressure of 325 pounds, that is to say it took the well one minute to gather the above pressure. The well has at various times had two pumping powers and seven drilling wells attached to it and at the same time gave a test of

120 pounds pressure at the well. This goes to show that there must be a great reservoir of gas to draw from. The rock pressure for the well at the present time is 475 pounds.

Records for various wells drilled in the Oakland City field during the past year are as follows:

A well on the Butler farm, Sec. 23, Range 14 E., Monroe Township, Pike County, drilled February 20, 1909, by the M. Murphy Oil Company; rock pressure 475 pounds; daily capacity 2,000,000 cubic feet.

A well on the Simpson Burnett farm, Sec. 23, Range 8 W., Monroe Township, Pike County, drilled by the Monroe Oil Company, August, 1909; rock pressure 500 pounds; daily capacity 6,500,000 cubic feet. This is the best gas well in the State of Indiana.

A well on the M. Skinner farm, Sec. 23, Range 8 W., Monroe Township, Pike County; rock pressure 485 pounds; daily capacity 1,200,000 cubic feet.

Well No. 1 on the Case farm, Monroe Township, Pike County, drilled by the Rogers Oil and Gas Company, April, 1909; rock pressure 500 pounds; capacity 2,000,000 cubic feet.

A well on the Peter English farm, Sec. 26, Range 8 W., Pike County, drilled by John McCray, May, 1909; rock pressure 475 pounds; capacity 2,000,000 cubic feet.

The Petersburg field has been reopened by a well drilled on the Wm. Lamb farm, about one mile southwest of Petersburg. This field was at one time one of the most promising gas-producing pools in the State of Indiana. About a mile from the above mentioned well was located the famous "Jumbo" well, at one time the largest producing well in the State. It furnished gas for the city of Petersburg for several years, and would undoubtedly be producing at the present time had it had the proper attention, but owing to leaky casing fresh water was allowed to drown out the gas. This was ascertained too late to remedy the evil and save the well.

The record for the well on the Wm. Lamb farm is (location Sec. 28, Washington Township, Pike County):

	<i>Feet.</i>
13-inch drive pipe.....	57
10-inch drive pipe.....	124
8½-inch casing .....	791
6½-inch casing .....	1,075
Top of gas sand.....	1,162

Drilled in 3 feet.

Tested 3,162,000 cubic feet capacity.

Completed March 24, 1909, by Queen Bros. and Fenton.

Two more wells are being drilled in this township and an attempt is being made to connect this field with the Oakland City field.

In conclusion, I will say that it is reported on good authority that companies are being organized and franchises sought to furnish gas to numerous cities in these southern Indiana counties. But, owing to the small acreage of gas-producing land yet developed in this district, there is but one city in this field that is now being furnished with gas, that being Oakland City. A line is being laid to furnish Petersburg, and it is but a question of a short time until that city is again using natural gas as a fuel.

During the past year eighty oil and gas bearing wells have been completed, fifty of which produce more or less gas. At present there are at least fifty strings of drilling tools at work in this field, and it is impossible to procure leases in or around either the Oakland City or the Petersburg branch of the field. The coming year will undoubtedly be the banner year for southern Indiana, as oil and gas men are flocking there from all parts of the country.